

# INDIAN STATISTICAL SYSTEM

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# INDIAN STATISTICAL SYSTEM

A Plan for its Rationalisation



J. R. RAO

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## PREFACE

An effort has been made in the following pages to assess the present Indian Statistical System. Certain suggestions are offered to increase the efficiency of the System and to improve the utility of the data disseminated by it. I would be happy if the criticism of the System is taken in the spirit in which it is offered and suggestions for its improvement are given serious consideration.

I thank the Indian Institute of Public Administration, New Delhi, for giving me an opportunity to work on this subject when I was their Statistician. I am grateful to the Director, Dr. J.N. Khosla, for agreeing to publish the book and to write the Foreword.

J. R. RAO

## FOREWORD

An efficient statistical system is a prerequisite of planned development. The system should be such as to enable speedy collection of reliable statistical information as and when it is needed. To this end, the *modus operandi* of collection of statistics as well as the functioning of the organisation geared to the task should be continuously reviewed in the light of changing requirements.

This small brochure deals with the statistical system in India. The author traces the evolution of the system through its various stages and compares a few of its important features with the same in some foreign countries. This is followed by an evaluation of the structure and working of the system. The author makes a number of suggestions for making improvements in the existing machinery for collection of statistics at the central and state levels.

I hope that this work will prove useful for the students as well as the practitioners of public economic administration.

New Delhi,  
January 22, 1968.

J. N. KHOSLA  
*Director*  
Indian Institute of Public Administration

## INTRODUCTION

In recent years the use of statistics has been increasing enormously. Policy makers, research workers, and generally the enlightened public have all, at one time or the other, something to do with statistics, published or otherwise. Available statistics, until recently, were confined to the immediate administrative needs of the governments and were limited in scope by the administrative provisions under which they were collected.

The need for detailed and reliable statistics becomes clear when we keep in mind that policy makers have to take several important decisions during the course of their work. Decisions, if they are to be effective and rational, should be based on facts. To rely entirely on memory as far as facts are concerned would be dangerous. It becomes necessary to refer to recorded facts. Most of the facts are given out in quantitative terms. A collection of facts in quantitative terms is statistical information. The science of statistics helps us to arrive at tentative conclusions based on facts in the form of figures. This is the place of statistics in administration.

In a planned economy the need for decisions based on collections of figures is much more. There are several stages in planning. First, a plan has to be formulated. This requires both current and past information in great detail. After formulation the plan has to be implemented. Defects at the stage of formulation come to light at the implementation stage. These defects have to be remedied by means of revised plans, drafted on the basis of the results of a review, taking into account unthought of bottlenecks and unfulfilled targets. Care should be taken to see that exaggerated figures, more in the nature of propaganda, are not used.

Quantitative research in social sciences would be very useful in the planned development of a nation, by giving us scope to look into the various implications of several

alternative policies, and by providing estimates of several coefficients which describe the structure of society and its economy, and by giving us an idea of the possible future, by projecting the path of certain important variables based on certain assumptions. All this is essential if planning is to be scientific. This increases the need for statistics.

Added to these, the demand for statistical information from research workers is increasing because of the recent developments in theoretical statistics, which have made research work in several fields of knowledge more and more quantitative.

Over and above these requirements, democratic governments have to keep in mind the public they serve. Public co-operation is needed for all their plans. Popular opinion is generally based on impressions. In a society where people are fast becoming figure-conscious, it is possible that impressions are based on statistics. Hence it is necessary to see that the statistical information disseminated gives the true picture of the economy.

There is a lot of information that would be useful to several users in varying degrees, among which, vital statistics, data on prices, production, area under cultivation, capital formation, national income, trade, transport, education, housing, banking, and balance of payments, are some of the more important. In most of the countries of the world, including India, information on many of these items is collected either on a regular or on an *ad hoc* basis.

It is unfortunate that in the data collected in India there are still some defects and deficiencies. The experience of the National Income Committee and the Committee on Distribution of Income and Levels of Living is enough to convince one that all is not well with our statistical system.

On a close examination one feels that the defect, to a large extent, lies in the organisation of the system. An attempt is made here to suggest improvements. It deals with the agencies responsible for the collection, compilation and presentation of data and excludes agencies engaged in the analysis and use of published information attached to the various Ministries. Agencies dealing with defence statistics are left out of discussion.



Before discussing the actual situation it would be better to look into some general ideas on organisation, the historical evolution of the system in India and to compare the present Indian system with some typical organisations abroad.

We now turn to general ideas about organisation.

### *General Ideas Regarding Organisation*

The problems of organisation and operation of a national statistical service are many and inter-related. They are concerned essentially with: (i) the type of structure and organisation which would reflect the nature of the country's economy, its stage of development and industrial structure; (ii) the means of maintaining effective co-ordination and control over all governmental statistical activities in order to avoid unnecessary duplication and waste of resources, to ensure the development of a well balanced, integrated set of statistics and to maintain adequate statistical standards; (iii) the techniques for the most efficient utilisation of staff and equipment; and (iv) provision for the training of statisticians in order to ensure a continuous flow of trained personnel into the statistical service.

The statistical systems of the world can be classified broadly into three groups, viz., (1) Statistical systems decentralised by subject with a minimum of control or co-ordination; (2) Statistical systems decentralised by subject with a co-ordinating authority; and (3) Statistical systems with one department responsible for statistics.

The extent of centralisation or decentralisation depends on several factors. But complete centralisation or decentralisation does not exist in any country. (Some typical systems are discussed at a later stage). A decentralised scheme could perhaps be suitable for an economy which is large and has resources in the form of personnel and money. But in the case of a country, where there is dearth of technical manpower and economic resources, it is better to be satisfied with a little less of decentralisation.

A national statistical system, whose function it is to collect, compile and publish statistics should have a blue-print of activities with gaps in series, priorities, etc. Only then it is possible to co-ordinate the activities of various wings and to interpret data sensibly.

It is the duty of the National Statistical Service to see that the statistics of the country reflect and illustrate the close inter-relationships between the various series. This can be done by common definitions, common classification systems and common mathematical techniques.

It should be the policy of the Service to constantly review publications and get as much information as possible from the contacts of the Government with various agencies. It should be independent and objective.

A central co-ordinating office or a national council of statistics may be particularly well suited to carry out general co-ordination. There may be committees to study the difficulties in particular fields. These are auxiliary bodies. It would be better if producers' and workers' associations are also represented on the Committees. National Statistical Conferences can be of great help in discussing the more important problems. The central co-ordinating office can take some practical measures to achieve co-ordination on the following general lines:

- (1) Planning of work programmes well in advance for efficient working and avoiding two or more organisations doing the same work.
- (2) Reviewing of questionnaires and forms to see that there is minimum duplication; to extend the usefulness by adding questions; to introduce uniform concepts and definitions; to formulate questions in such a way as to avoid obscure and biased answers; and thus minimise the burden on respondents.
- (3) Establishing technical standards to facilitate easy comparison.
- (4) Arranging for exchange of personnel, proper selection and training.
- (5) Producing well planned publications.
- (6) Introducing comprehensive legislation incorporating all details. Regarding data collection there are three main considerations to be kept in mind, viz: (i) necessity, (ii) feasibility, and (iii) desirability. The respondent should not be approached more often than is absolutely essential.

There should be a plan for data collection incorporating the following ideas: (a) Identification of respondent group, (b) Extent of coverage, (c) Frequency of timing, (d) Methods of data collection, (e) Pre-test and follow up, and (f) Publicity and public relations.

Data processing should be as quick as possible to avoid delay in presentation. It is better to specify clearly the work to be done by each and to determine the regular workloads. All jobs and operations should be scheduled if possible. Adequate control should be kept of the operations and there should be periodic evaluation with a view to improving the performance. Publications can be divided into three categories:

- (a) General purpose publications issued regularly,
- (b) Special subject publications issued regularly,
- (c) Special studies and *ad hoc* reports.

Periodic publications should be regular and in time. Delay makes them less useful. If there are printing bottlenecks alternative methods of presentation should be sought immediately. Unpublished data should be made available to the needy in some form. Presentation should be attractive.

There should be a Board: (1) to eliminate all unnecessary publications; (2) to ensure that each publication retained meets a need that can be clearly demonstrated and fully justified; (3) to review the composition and format of material in each publication; (4) to review every publication before it is released for distribution; and (5) to standardise publication wherever feasible.

A number of countries follow the ideas to varying degrees.

## GROWTH OF THE STATISTICAL SYSTEM IN INDIA

For a critical study of the Indian statistical system, in the light of the above ideas, it is necessary to go into the history of its growth to the present dimensions. An attempt is made, in the following pages, to give an outline of this history.

In 1807, the Court of Directors of the East India Company sent a recommendation to the Government at Fort William, to conduct a statistical survey. Till then the position with regard to statistics was one of inadequate coverage and limited application. Dr. Francis Buchanan spent about £30,000 and submitted a report in 1816. In 1838, Mr. Montgomery Martin was sent to study them. "The History, antiques and statistics of Eastern India" (London) in 3 volumes, covering 9 districts of Bengal was the result.

During 1855 the Court of Directors directed the Governor General to procure information which would work as a faithful register of the existing state of affairs. In 1856, Mr. Townsend, Editor of the Annals of Indian Administration, was asked by the Government of India, Home Department, to consolidate the information culled from the Administration Reports of various provinces. In 1859, Mr. George Smith took over as Editor.

Around this time, Mr. Laing, Financial Member of the Council, felt that a statistical branch should be established in the Finance Department, as they were the largest users and had already compiled returns. He recommended that a Committee should be formed to consider statistical forms with a view to achieving uniformity. Mr. Grey of the Home Department felt that the Home Department was a more suitable place for the establishment of Statistical branch.

Lord Elgin, Governor General, concurred with Mr. Laing, and issued orders for the establishment of a Statistical branch in the Finance Department. He favoured the establishment of a Statistical Society to help the Government in its work

regarding statistics, and a Committee to review forms to be incorporated in reports.

In 1863, the Committee submitted its first report and plans prepared on the lines set by the International Statistical Congress (London), 1860. They reported only on commercial and financial aspects. In 1865, the final report was submitted along with the forms passed on by Sir Charles Trevelyan who later became Finance Member. In 1867, the Secretary of State for India, approved the plans of forms and agreed to the small additional expenditure involved. The Provinces were asked to submit returns in prescribed forms.

In 1868, Statistical Abstract relating to British India (1840-65) was got up by the India Office and presented to the Houses of Parliament. Since then it was published annually in England till 1923.

In 1869, Mr. Hunter presented his scheme of systematic Gazetteers. In 1871, he was appointed Director General of Statistics in the Department of Agriculture, Revenue and Commerce. He obtained material in statistical form under six heads, viz.: (i) topographical, (ii) ethnical, (iii) agricultural, (iv) industrial, (v) administrative, and (vi) medical. In 1881, the first issue of the Imperial Gazetteer of India was brought out.

The famine in 1860 necessitated the census operations. In 1872, a partial and limited census was taken. The first proper decennial Census was taken in 1881. But the organisation was only temporary.

In 1876, the Department of Agriculture, Revenue and Commerce brought out Miscellaneous Statistics relating to British India, containing figures for 1874-75. In 1880, the Finance Department brought out *Finance and Revenue Accounts* and the Home Department brought out *Statistics of British India for the Judicial and Administrative Departments Subordinate to the Home Office*.

In 1881, a separate Department of Agriculture was sanctioned. The tables prepared in 1866 were revised by officers of the Agriculture Departments, who met in 1883-84 at Calcutta, in order to inaugurate a scheme of systematic collection of agricultural statistics. Crop forecasts for wheat were started in 1884. Many other crops were included later.

At this stage an enormous mass of agricultural statistics was pouring in. The Department of Agriculture submitted proposals for expansion. Finance and Commerce Department wanted to take over the responsibility for these statistics. The Agriculture Department refused to yield. Mr. Baines, Census Commissioner, 1891, and Mr. O'Connor, Assistant Secretary in charge of the statistical branch in the Finance and Commerce Department, were asked to look into the situation and report. They suggested the establishment of a separate organisation under a full time specialist to look into statistics.

The Department of Finance objected saying that there were not enough funds. But the real reason seems to be that the Finance Department did not want to leave an expert like Mr. O'Connor, who was tipped for the new post.

But in 1895, the Government of India issued a resolution appointing Mr. O'Connor as the Director General of Statistics. He was to be an independent officer publishing reports in his name and responsibility. All the statistical work of Finance, Commerce, Agriculture and Revenue Departments was transferred to him. In 1896, the statistical work of the Home Department, excepting the Census part of it, was given to him. In 1901, the Statistics Department of the Government of Bengal was also assigned to him. (It was later retransferred to Bengal in 1923, because it contravened a ruling of 1890, that the regulation of inland statistics was the business of Provincial Governments.)

In 1905, the post of Director General of Statistics was abolished. Lord Curzon constituted a Department of Commerce and Industry and created a Director General of Commercial Intelligence and Statistics (DGCIS) with the following functions:

- (a) To collect commercial statistics to help trade and business;
- (b) To provide a link between Indian and foreign businessmen;
- (c) To compile and publish statistical information in the form of journals and *ad hoc* bulletins; and

- (d) To compile and publish statistical data previously done by the Government of India on subjects of commercial, judicial, administrative and agricultural importance.

The Director of the Geological Survey of India wanted that the responsibility of publishing the annual statistics of minerals be transferred to him. This was done.

Staff was appointed for the publication of the Indian Trade Journal and in 1906 the first issue came out. In 1907, the DGCIS wanted to split two journals under him into nine. This was granted.

In 1910, three persons, M/s Datta, Shirras and Gupta conducted a survey into prices and submitted a report in 1913. The tables which were released in 1914 were a valuable contribution to the history of Indian statistics and its progress during 22 years.

When Government shifted to Delhi there was a proposal to split the DGCIS's office into two, dealing with : (i) collection and publication, and (ii) distribution of commercial intelligence.

A Directorate of Statistics was established in Delhi in 1914. The division of functions between the Director of Statistics and the DGCIS was as follows :

- |                                 |         |
|---------------------------------|---------|
| (a) Review of trade             | } DS    |
| (b) Crop forecasts              |         |
| (c) Review of tariff valuations | } DGCIS |
| (d) Indian Trade Journal        |         |

The office of the DS consisted of 10 sections with 100 members in all. The sections were: (i) General (registry, issue and records), (ii) Prices and freights, (iii) Wages, (iv) Judicial and administrative statistics, (v) Rail and riverborne trade of India, (vi) Trade of Bengal, (vii) Seaborne trade, (viii) Frontier trade, (ix) Agricultural statistics and forecasts, and (x) Commercial, industrial and financial statistics.

Mr. Shirras was appointed the first DS. He brought out 3 manuals : (1) A manual on the preparation of crop forecasts in India, (2) Orders relating to publication of statistics

regarding seaborne trade in British India, (3) A guide to the statistical publications of India.

Because of the deteriorating financial situation after the war the DGCIS and DS were merged. The post of DGCIS was abolished. Bengal Trade section was transferred to Provincial Government. A Statistical Abstract of British India was brought out in place of five volumes of Statistics of British India.

In 1925, an Economic Enquiry Committee was formed to enquire into the question of the adequacy of data, with Sir M. Visveswarayya as the Chairman. One of their recommendations was that all statistics should be centralised under the supervision of one authority. On this recommendation the views of the Provincial Governments were sought. But before they were known the recommendations of the Royal Commission on Agriculture were out (1928).

The Royal Commission on Agriculture suggested : (1) the establishment of the Imperial Council of Agricultural Research to promote, guide and co-ordinate agricultural research, and to compile and distribute statistical information concerning agriculture and animal husbandry, (established in 1930 as a department of the Government of India), and (2) the appointment of a Statistical Officer at provincial level to take overall statistical work in the Provinces.

For purposes of inter-regional comparison they preferred a separate Department of Statistics. They did not favour the creation of a full scale central organisation as suggested by the Economic Enquiry Commission, but suggested the establishment of boards on which economists, scientists and businessmen, find a place to advise the Director, Central Bureau of Statistical Information.

In 1931, the Royal Commission on Labour in India suggested measures of legislation in order to overcome the difficulties faced by agencies at the collection stage.

In 1933, a Statistical Research Bureau was created in Delhi. This was later merged with the office of Economic Adviser to the Government of India, established in 1938 as a result of the recommendations of the Bowley Robertson Committee (1934). This Committee launched an enquiry into the possibility of economic census in India. The preparation of a



guide to current official statistics is one of their suggestions. They concurred with the Economic Enquiry Committee (1925) about the establishment of a central office and provincial statisticians. In 1936, it was decided to create a Central Statistical Office as early as possible.

The advent of the war increased the need for statistics and each department created its own sections to look into statistical work. This led to an enormous increase in the personnel in a short period.

The recommendations of the Royal Commission on Labour were given effect to by the Industrial Statistics Act (1942). A Directorate of Industrial Statistics was formed in 1945 to administer the Act. The Directorate was part of the Ministry of Commerce and Industry. The statistical branch of the Department of Labour, and the Directorate, formed to construct cost of living indices, were fused together in 1946 into the Labour Bureau.

The Census of Manufacturing Industries (CMI) started in 1946. This provided data on several aspects of manufacturing industries. The Sample Survey of Manufacturing Industries (SSMI), started later, gave estimates of some valuable variables. The CMI and SSMI were discontinued in 1959 and the Annual Survey of Industries has taken their place.

In 1948, a Directorate of Economics and Statistics started functioning in the Ministry of Food and Agriculture, for the collection and publication of statistics regarding land utilisation, production, prices, wages, etc. Formerly this work was done by the DGCIS.

In 1949, the National Income Committee was formed to furnish an estimate of National Income. In the same year a statistical unit was established at the Centre to co-ordinate all the statistical activities in the country. This grew into the Central Statistical Organisation (CSO). Later in 1954, a National Income Unit was added to the CSO to look into the work of estimating National Income.

The Census Act was made permanent. The Registrar General's office was established on a permanent basis.

A Directorate of National Sample Survey was created in 1950 to compile statistics on different socio-economic aspects on a sample basis. As the Industrial Statistics Act (1942)

excluded the commerce, trading and banking sectors, a Collection of Statistics Act was passed in 1951. This came into effect in 1956. The Directorate of Industrial Statistics which was a part of the Ministry of Commerce and Industry was transferred to the Cabinet Secretariat and has been the Industrial Statistics wing of the CSO, since 1959.

A new series of Statistical Abstracts of India was started in 1949. In the same Year the Office of the Economic Adviser to the Government of India, Ministry of Commerce and Industry started the Monthly Abstract of Statistics. In 1951, the compilation of this was taken over by the CSO.

The CSO started in 1951, acts as a co-ordinating and advisory body. It has the benefit of advice from a Standing Committee of Departmental Statisticians and Annual Conferences of Central and State Statisticians. It is attached to the Cabinet Secretariat.

This history in summary form brings us to the recent days. In the last few years, there has been an enormous increase in the agencies and publications dealing with statistics. In 1957, the CSO issued a Key to Current Official Statistics, giving under 25 broad heads, the series, source of information, name of the periodical in which published, frequency of publication and approximate time-lag. Eighty three periodicals are listed in an annexure to this Key. During the last few years some of the periodicals have gone out of publication, some have been added, and some are coming out under changed titles. The Key is yet to be brought up-to-date. In addition to the agencies of the Central Government, which are listed in the Key, there are State Government agencies and private organisations which collect and publish statistics. This gives a rough idea of the size of the organisations that deal with statistics.

The responsibility for collection of statistics as between the Centre and the States is determined by the responsibility for the subject matter concerned. In actual practice, even in cases where States have the primary responsibility for the subject fields, the Centre acts as the co-ordinating authority for the presentation of data on an all-India basis.

The responsibility for the processing of data collected, which is decentralised at present, devolves on the statistical

organisations in the different Ministries of the Central Government and in the several departments of the States.

According to the nature of their functions the organisations at the Centre can be divided into four classes:

- (1) Organisations collecting data as a by-product of administration and execution of Laws, *e.g.*, Central Board of Revenue, Railways, Posts & Telegraphs, Directorate General of Supplies and Disposals, etc.
- (2) Organisations which deal with the production and distribution of commodities, *e.g.*, Textile Commissioner, Controller of Iron & Steel, Controller of Imports and Exports, etc.
- (3) Organisations intended for collection of statistics, *e.g.*, Census, CSO, Directorate of Economics and Statistics, Research Department of Reserve Bank of India, etc.
- (4) Research organisations, *e.g.*, ICAR, ISI, etc.

As for the organisation in the States there is no uniformity. The State Bureaux which were started as a result of the recommendations of the Gregory Committee in 1946, act as co-ordinating bodies as far as state statistical work is concerned. The CSO exerts its co-ordinating influence through the bureaux.

Chart No. 1 on pp. 14 and 15 gives an idea of the agencies dealing with the collection and dissemination of statistics at the Centre. These agencies get information from various sources including the Bureau of Economics and Statistics in the States.

# CHART NO. 1

## Chart Showing the Statistical Agencies attached to Ministry in the Government of India

<i>Ministry of Food and Agriculture</i>	<i>Ministry of Finance</i>	<i>Ministry of Commerce &amp; Industry</i>	<i>Ministry of Home Affairs</i>	<i>Ministry of Labour</i>	<i>Ministry of Railways</i>
1. Directorate of Economics & Statistics.	1. Office of the Chief Economic Adviser.	1. Department of Commercial Intelligence and Statistics.	1. Registrar General of India.	1. Labour Bureau.	1. Office of the Economic Adviser, Railway Board.
2. Statistical Wing, Indian Council of Agricultural Research.	2. Reserve Bank of India.	2. Economic Adviser, Government of India.		2. Statistical Section, Directorate General of Settlement & Employment.	2. Statistical Offices of the various Railways.
3. Statistical Wing, Forest Research Institute.	3. Statistical Branch (Income Tax) Central Board.	3. Statistical Division, Office of the Chief Controller of Imports & Exports.		3. Statistical Unit, Ministry of Labour.	
4. Statistical Wing, Directorate of Sugar and Vanaspathi.	4. Statistics and Intelligence Branch, Central Excise.	4. Statistical Wing, Office of the Textile Commissioner.		4. Statistical Unit, Department of Mines.	

5. Office of the  
Economic  
Adviser.

5. Statistical Section,  
Office of the Con-  
troller of Iron and  
Steel.

6. Research and Statis-  
tics Section, Com-  
pany Law Adminis-  
tration.

5. Directorate of  
marketing and  
Inspection.

*Ministry of  
Irrigation &  
Power*

*Ministry of  
Defence*

*Ministry of  
Works, Housing  
and Rehabilitation*

*Ministry of Education*

*Ministry of  
Transport*

*Ministry of Health*

Statistical  
Section.

Statistical Wing  
attached to  
Army, Navy &  
Air Force.  
Statistical Sec-  
tion, Directorate  
General of Sup-  
plies & Disposals.

Statistical Section.  
Statistical Branch,  
Roads Organisation.

Statistical Bureau,  
Directorate General  
of Health Services.

*Cabinet Secretariat*

*Ministry of Scientific Research*

*Ministry of Civil Aviation*

1. Directorate of National Sample Survey.  
2. Central Statistical Organisation.

Statistical Section.

Statistical Section.

## TYPICAL STATISTICAL SYSTEMS ABROAD

In addition to the brief history, a knowledge of some of the typical statistical systems abroad would be useful, when we discuss a plan of re-organisation of the Indian system. To this end, a brief description of the systems in a few countries is given below:

### (1) U.K.

The government statistical services have developed within the general framework of the civil service and have no separate written constitution. Their organisation and their methods of work have been fashioned by experiment in the course of which a common purpose and outlook have been achieved.

The work of collecting primary data is done by the individual departments concerned. All the larger and some of the smaller departments have statistics divisions. Some departments and boards are not large enough to employ their own specialist staff, so arrangements have been made for them to consult the Central Statistical Office.

Co-ordination is achieved by assigning to some of the larger departments, such as the Ministry of Labour and National Service, and the Board of Trade, responsibility for whole of the statistical work, relating to a particular subject, even though some of the data may be collected by other departments. The general responsibility for acting as a central advisory, consultative and co-ordinating office for the Government Statistical Service as a whole rests on the Central Statistical Office established in 1941, within the Cabinet Office under the general responsibility of the Prime Minister.

### (2) France

In France, the compilation of statistics has always been decentralised. The various government agencies compile and publish different administrative statistics which come within their competence.

Up to 1940, there existed a Bureau, the *Direction de la statistique generale de la France*, which had to : (i) organise and analyse the large surveys which, by their nature, were beyond the competence of any one government agency, (ii) observe prices and compute various economic indexes, and (iii) co-ordinate the statistical work of the French administration, analyse the results and publish the essential facts in year books and bulletins.

In 1941, this Bureau was amalgamated with a Demographic Service created in 1940, to form the *Service National des Statistiques* (National Statistical Service).

In 1945, the National Statistical Service was consolidated with the *Institute de conjoncture* (Institute of Economic Observation) created in 1938. It then acquired the name of *Institut National de la statistique et des Etudes Economiques pour la metropole et la France d' outre-mer* (National Institute of Statistics and Economic Studies for France and Territories Overseas—N.I.S.E.S.)

The Central Services of the Institute are: (1) General Statistics, (2) France Overseas Statistics, (3) Economic Analysis, (4) Processing Division, and (5) Central Service of Documentation. The General statistics and France overseas statistics are divisions of planning, co-ordination and utilisation of primary data supplied by surveys.

Chart No. 2 gives the structure of organisation in detail. The Institute controls the activities of 18 regional offices also. The connection, the Institute has with the various governmental agencies and the assistance it can render them, enables it to fulfil its co-ordinating function in a thorough and efficient manner.

### (3) U.S.A.

In U.S.A., we find a decentralised system. The Office of Statistical Standards co-ordinates the activities of: (1) General Purpose Statistical Agencies, (2) Administrative and Regulatory Agencies, and (3) Analytic and Research Agencies. The Central Co-ordinating Agency tries to prevent duplication, achieve balance, and develop procedures for an integrated system of governmental statistics.

The main function of the General Purpose Statistical Agencies is to collect, compile and publish statistics in specific fields for general use. The Administrative and Regulatory Agencies collect statistics as a by-product of administrative and operating responsibilities, whereas the Analytic and Research Agencies use statistics for interpretative purpose and for preparation of indices.

The Office of Statistical Standards is attached to the Bureau of the Budget, in the Executive Office of the President.

An annual consolidated budget is prepared. It serves as an aid in accomplishing the objective of a stronger, more economical and a balanced statistical system.

All forms and questionnaires are reviewed to make sure : (1) that information sought is necessary and relevant, (2) that it is not already available, (3) that the forms are comprehensible and conform to business recording practices, (4) that the number of respondents is kept at a minimum by efficient sampling techniques, and (5) that information is collected no more frequently than is necessary.

From the description of the systems given above, we find that there are differences in the extent of centralisation among the countries, U.K. and France being more decentralised and Italy and Canada more centralised with U.S.A., Japan and Brazil coming in between. Each country has adopted the system best suited to it based on its resources and requirements.

With this picture in mind we shall be in a better position to view the Indian system.

#### (4) Japan

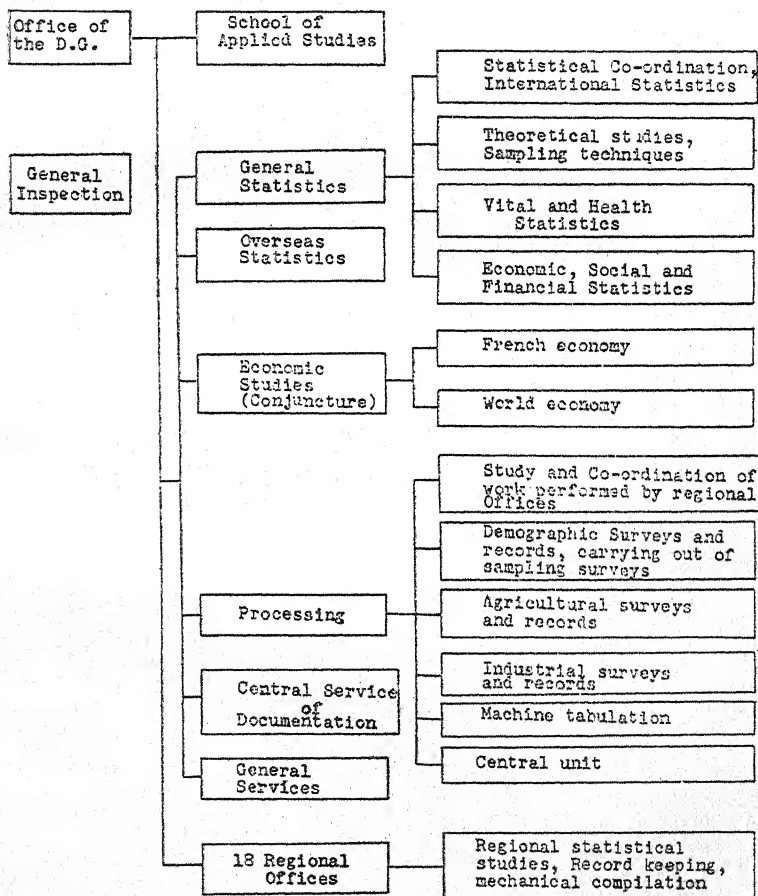
Every Ministry in Japan contains a statistical bureau, division or section as prescribed in the Establishment Law of each Ministry. The Prime Minister's Office has a Statistical Bureau, the Ministries of Agriculture and Forestry, Labour, International Trade, and Industry and Welfare have statistical divisions. Other Ministries have statistical sections. The Statistical Bureau of the Prime Minister's Office plays the role of a Census Bureau.

The Administrative Management Agency, an external organ of the Prime Minister's Office, contains the Statistical



Chart No. 2

Organisation Chart of the National Institute of Statistics  
and Economic Studies, France.



Source: L'Institut National De La Statistique Et Des Etudes  
Economiques Pour La M<sup>et</sup>ropole Et La France D'Outre-mer,  
PARIS

Standards Division which co-ordinates the activities of the statistical agencies of the different Ministries on the basis of the provisions of the Statistics Law.

After the War the system was badly disorganised. In 1946, a statistical mission from the United States visited Japan and submitted recommendations for modification of the system.

The steps taken are : (i) the establishment of the Statistical Commission, (ii) promulgation and enforcement of the Statistics Law, (iii) establishment of a Statistics and Research Division in four Ministries, (iv) establishment of Statistical Sections in the other Ministries and in all prefectural governments, (v) establishment of the crop reporting office, and (vi) an increase in the number of local statistical officials.

### (5) Brazil

For quite sometime, before the proclamation of the Republic in 1889, at least three sets of data on the same problem were presented in several cases, collected by the Union, the States and the Municipalities. No one bothered to find out whether or not the same data was being collected by others. There was no co-ordination of activities.

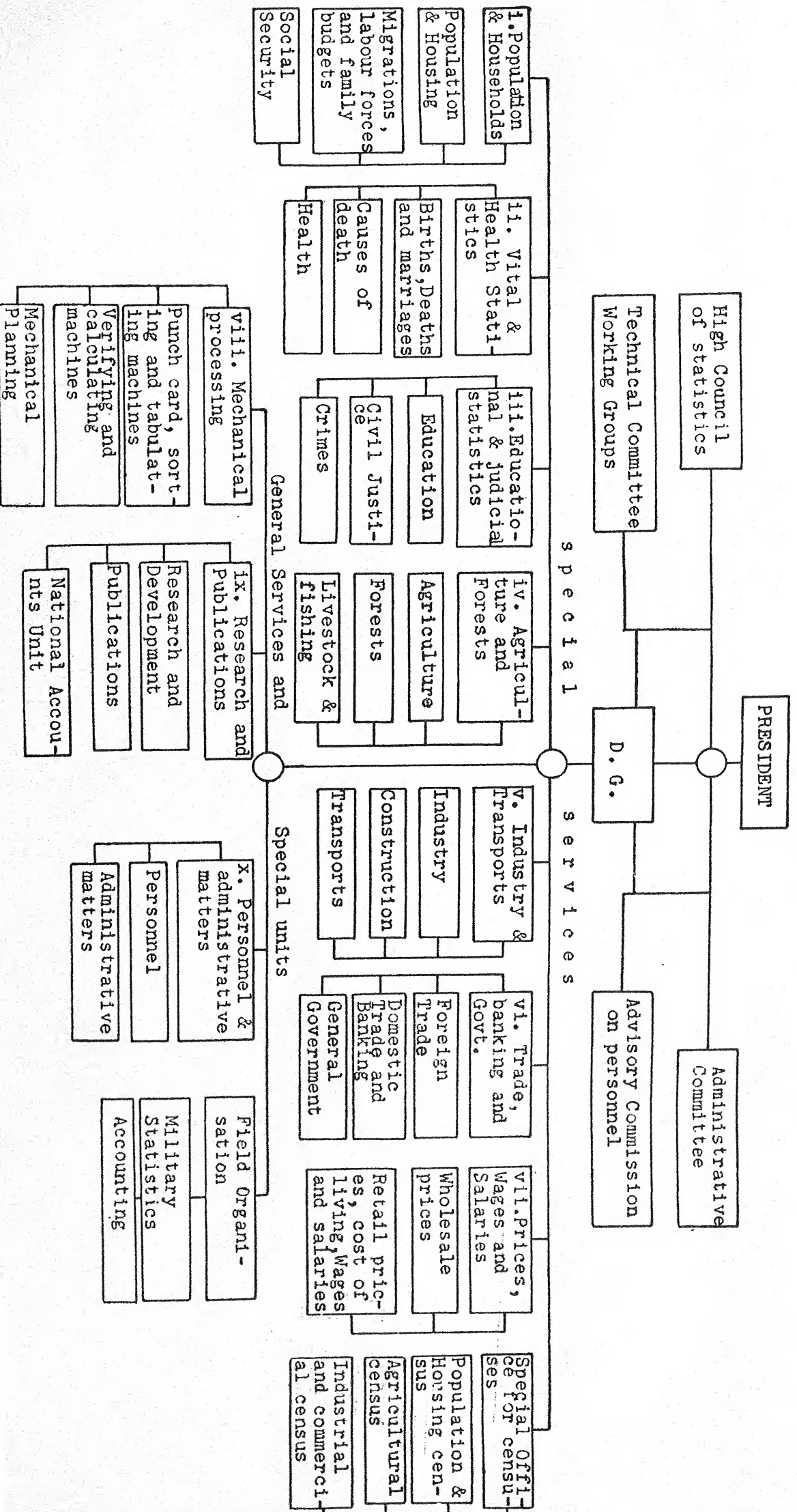
Attempts to correct the situation were successful in 1934, when the *Institute Nacional de Estatística* was created. It later became the *Institute Brasileiro de Geografia e Estatística*.

The Union, State and local governments agreed to take part in the organisation of the Institute by integrating all the statistical services. The resources with which the Institute ought to maintain itself would, in principle, be supplied by all the governments concerned. Personnel would be selected by competitive tests. All statistical departments became subordinate to the Institute from a technical point of view. A large number of statistical bureaux, both federal and state, which existed before the creation of the Institute, came under its jurisdiction.

The orientation and basic direction of the activities of the Institute are incumbent upon a collegiate body, the *Conselho Nacional de Estatística* (National Council of Statistics). This is composed of federal and regional organisations.

This highest organ of the council is the General Assembly with authority to deliberate upon any subject that may be of

Chart No.3  
ORGANISATION CHART OF THE CENTRAL INSTITUTE OF STATISTICS, ITALY



Source: Italian Statistical system, Central Institute of Statistics, Rome, Italy.

By 1939, the broad framework of a unified and co-ordinated system of national statistics for Canada had been established, though some important details remained to be filled in, and the whole organisation streamlined to bring it up to the highest standard of modern efficiency.

Among the post-war developments were the creation of two divisions in the Bureau—the Research and Development Division, responsible for integrating and analysing existing statistical data and developing there from new series of economic statistics of outstanding importance; and the Special Surveys Division, responsible for the sample surveys and development of scientific sampling techniques—the development of standard industrial and commodity classifications; and the streamlining of operations with a view to greater efficiency and economy. The last mentioned has included the conversion from manual to mechanical tabulation wherever suitable; the installation of up-to-date machinery; radical changes in census procedures; and the establishment of a Forms Control Section and an Advisory Board of Publications.

### *Present Organisation*

At the head of the Dominion Bureau of Statistics is the Dominion Statistician. His principal duties as defined in the Statistical Act are to advise on all matters pertaining to statistical policy; to supervise generally the administration of the Statistics Act; and to control the operations and staff of the Bureau. The Assistant Dominion Statistician is responsible for the internal administration of the Bureau and the external relations which it involves.

The Senior Research Statistician acts as adviser to the Dominion Statistician on matters of statistical methodology and as consultant for the various divisions. The Administrative Officer is concerned with organisation and methods from an operational point of view.

The staff of the Bureau numbers around 1,300 and comprises professional, technical and clerical personnel.

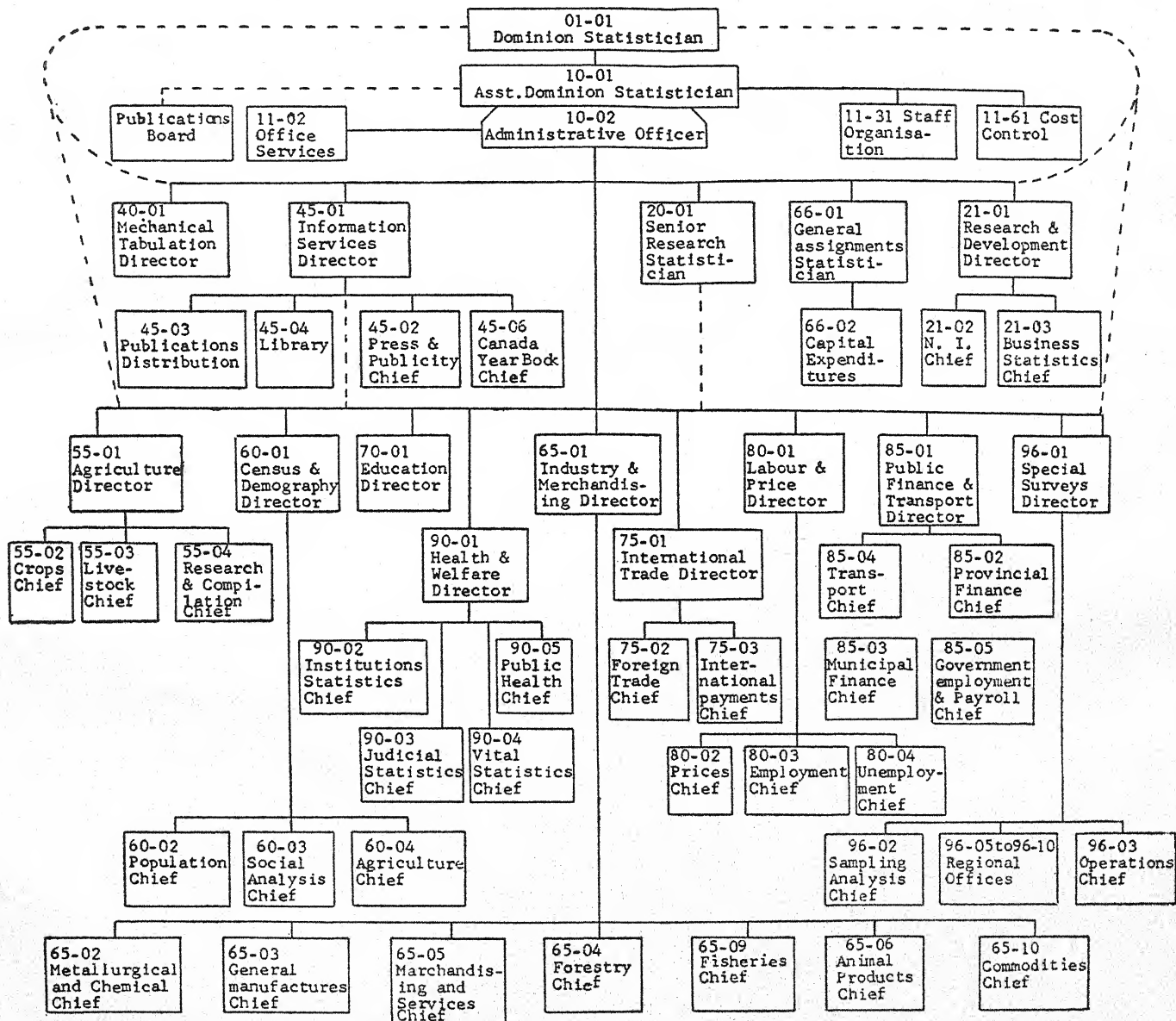
The data collected, compiled and analysed by the Bureau are made available for general use in the form of Report, Memoranda and Reference Papers.

An Advisory Board of Publications maintains a constant review of the Bureau's publishing programme with a view to eliminating unnecessary publications; ensuring that each publication meets a specific need; improvement in layout, structure of tabular and textual matter; and the attainment of uniform standards as between divisions of the Bureau.

As can be seen from Chart No. 4, there are 14 divisions in the Bureau. Co-ordination is achieved by Dominion-Provincial conferences, inter-departmental conferences and informal consultation. Representatives of national associations in the agricultural, industrial and other fields are frequently invited to participate in such conferences.

CHART NO. 4

## ORGANISATION CHART OF THE DOMINION BUREAU OF STATISTICS, CANADA



SOURCE: Dominion Bureau of Statistics, Deptt. of Trade &amp; Commerce.

## CRITICISM OF THE INDIAN SYSTEM

If there was one reason, above every other, why Indian statistics have not progressed as rapidly as might have been desired, it was the lack of a properly co-ordinated organisation in the Centre and in the States.

When a Statistical Bureau was first formed in 1895, under a Director General for the purpose of collecting and publishing various series formerly dealt with by different departments, the departments refused to part with their powers of general control and direction and laid down several restrictions as to the routing of correspondence from Provincial Governments. These obstacles clearly prevented the Bureau from developing into an organisation comparable to the powerful centralised offices that have grown up elsewhere.

By and large, hardly any attempt was made in pre-Independence days, to strengthen the statistical wings of various departments and to improve the quality of material. During the post-Independence days some efforts have been made to rectify the situation. But still there are some difficulties like lack of reliability, delay, duplication, non-placability, incompleteness of information, wastage, and non-comparability, which arise due to lack of proper co-ordination.

There is a huge time-lag between the collection and presentation of data. This may arise due to several causes, but two of them seem to be relevant. Because of the large number of units, each small in size, introduction of mechanical aids in tabulation leads to a lot of unutilised capacity and becomes uneconomic. Compilation of data is carried out manually or by low speed machines. This leads to delay in processing available information. The large number of units result in an increasing number of publications. Because of the large number of publications there might be a heavy

There has been an enormous increase in activity. But this has led to overlapping in certain cases, whereas there are several other fields which are left untouched. As an example trade statistics and small scale industries can be mentioned. The information obtained about these is meagre if not nil. Duplication results in more senses than one. Duplication of information as in the case of two or more agencies collecting data on the same item (data on cement, paper, cotton, manufactures, iron and steel are collected by more than one agency like DGCIS, DG Industry and Supply, Textile Commissioner, etc. Duplication in survey data is also not uncommon); repetition of series in several publications, and the resultant multiplication of expenditure on stationery and establishment are some forms of this.

The difficulty faced by the user is one of non-placability. Because of several publications it becomes difficult for him to locate the journal in which he can find the information he wants. This leads to frustration and disgust on the part of the worker and important research work is left unsatisfactorily done.

There is a lack of reliability. This arises because of errors of observation, reporting, and compilation. Errors in observation and reporting may be due to the lack of trained personnel in the field agencies, and/or because of the heavy work involved in multiple correspondence with several agencies. The lack of trained hands is itself a result of the large number of agencies at the Centre each one of which requires several of the very few trained men. Errors in compilation may be due to the fatigue in going through several routine computations manually.

It is possible that some part of the unreliability may be due to the lack of incentive to employees. When each unit is small the scope for promotion is small. This possibly leads to the staff not endeavouring to become more efficient.

Then there is non-comparability. Information relating to a particular item collected by two different agencies varies because of differences in definitions, etc. As an example we may take the series published by the Labour Bureau and the Census of Manufacturing Industries (now Annual Survey of Industries). Some information which both of them have is not at all comparable. It is possible that this non-comparability



arises because of lack of co-ordination between agencies which is not easy to rectify when there are so many agencies. Even periodic conferences at various levels between personnel in the agencies is not possible.

Coming to the question of historical series we find that the difficulties are not peculiar to India. The "Historical Statistics of the United States" in its introduction gives the types of difficulties these workers face and these are applicable to the Indian context also.

"The users of historical data are faced with the paradox of overabundance and scarcity. On the one hand a burdensome multiplicity of sources has frequently to be consulted in order to reconstruct one quantitative aspect of a particular subject. On the other hand, users are confronted just as often by a discouraging barrenness of data, discoverable only after much costly work and delay."

Discussing the difficulties further it says "Impediments to the use of Historical Statistics (then), include the initial difficulty of determining whether the data in fact exist, of identifying the public or private document in which the data may be found, of constructing time series where the data may not be arranged in suitable form and of identifying and interpreting changes in concept and coverage".

The following are some of the difficulties felt by the users in India in addition to the above. Most of the publications of earlier years are out of print and are available only in a few libraries. So, even if information is known to be available in a volume it is difficult to trace it. Time series on a continuous basis are not readily available because of the several changes that have been introduced (e.g., changes in territory, measurement units, etc.). Information is presented for different "years" (like, crop years, financial years, calendar years) in different publications the presentation being rarely uniform.

Some of these difficulties arise not strictly because of defects in organisation. But they may be met more effectively and easily with a modified organisation.

#### SUGGESTIONS

To overcome the difficulties it is necessary to introduce

some modifications in the organisation. The writer of these lines feels that the organisation presented in Chart No. 5 along with the diagram of information flow would be useful in bringing about the required changes.

Apparently, this re-organisation is highly centralised. But there is centralisation at different levels—the District, State and Centre. This should lead to a greater possibility of co-ordination in the system.

If the Indian Statistical Service (ISS) which has been instituted recently were extended to the States, the introduction of the re-organised scheme would be easier. The extension of the service could lead to uniformity in the statistics released by the States, easier technical control and objectivity in the system.

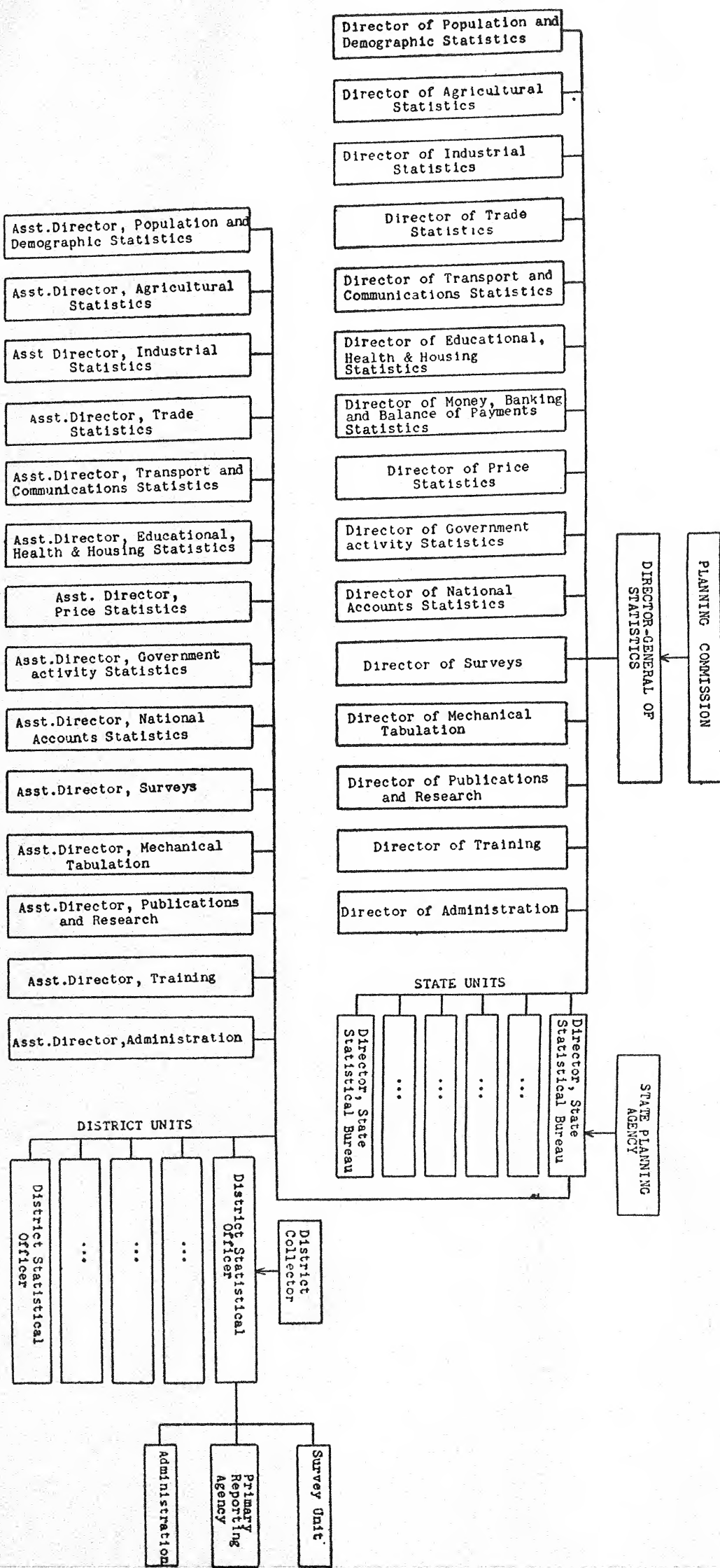
Several difficulties may be pointed out in this type of re-organisation. But a closer examination reveals that they are not insurmountable. Some of the possible difficulties are dealt with below.

The States may be reluctant to accept the modified scheme for fear that it might lead to excessive Central interference. It appears that some of the States are reluctant to the idea of extending even the ISS. The States can be persuaded to accept the re-organisation in the interests of uniformity, efficiency and facility in planning. They may be given financial assistance if necessary. Even then if the States refuse to accept the scheme, a central legislation can always be passed without any constitutional difficulty, to bring the system into effect, because statistics is a subject which appears only in the Union List and the Concurrent List in the VII Schedule of the Constitution of India.

The apprehensions of the States may perhaps be removed if the contemplated office of the DGS is kept under the overall control of the Planning Commission. The Planning Commission itself may be made a Constitutional Body so that the States have more faith in it. (The Finance Commissions have recommended this on other grounds too.) Added to this, the Planning Commission is the most suitable unit for the establishment of a statistical system because it is the largest single user of statistics.

There may be certain practical difficulties like treatment

Chart showing the suggested statistical organisation for India

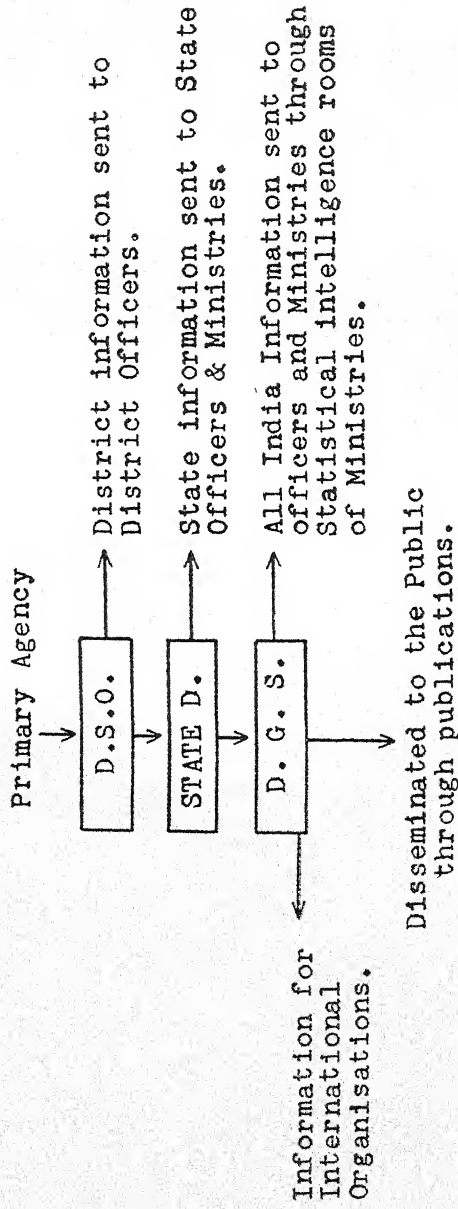


Note: 1. There will be Asst. Directors, Research Officers and Research Asssts. under the Directors.

2. Each Ministry will have a Statistical Intelligence Room attached to it in order to obtain information from the D.G.S. and pass on to the Ministers and officers in the Ministry.

3. Arrows indicate overall supervision.

Appendix to Chart No.5  
 Diagram showing the suggested flow of Information in the  
 Proposed Statistical Organisation for India



(Information on ports, Railways etc. can be passed on to the D.G.S. directly).



of seniority, who should head the system, etc. These difficulties can perhaps be removed by phasing the programme of re-organisation and by appointing the DGS by a system of rotation. A satisfactory solution of the problem of seniority can be found if a rational attitude is adopted. There will be difficulties, but these are not permanent in nature.

Some suggest that centralisation of this kind leads to delay. On the contrary, it should ensure increased efficiency because of the streamlined control, reduced correspondence and fixed responsibility.

This re-organisation does not come in the way of specialisation in important fields. The research section will always be on the search for new schemes and they can always be undertaken with the co-operation of all other sections.

The re-organisation need not lead to retrenchment, for, the excess personnel can be absorbed to strengthen the field offices, the survey units, or if they are willing, into the mechanical tabulation section after necessary training. Even otherwise, the statistical needs of India are daily growing and there will always be need for more and more trained men.

In the re-organised scheme it is better if there is only one publication, with sections on :

- (a) Population and demography;
- (b) Agriculture;
- (c) Industries;
- (d) Trade;
- (e) Transport and communications;
- (f) Education, health and housing;
- (g) Money, banking and balance of payments;
- (h) Prices;
- (i) Government activity; and
- (j) National accounts.

The periodicity of publication of each can be fixed on the basis of actual requirements. Once a year a Statistical Abstract of India may be brought out. Once in 10 years a historical statistics can be published. (See below for the suggestion regarding historical statistics).

It would be better, in the interests of uniformity, if the

Director General of Statistics sets the pattern to be followed by the States in their statistical publications.

To alleviate the difficulties of users of statistical time series it is suggested that a publication entitled "Historical Statistics of India" be brought out giving time series on various important variables.

In the Introduction to the "Historical Statistics of U.S." the objective of such a volume is clearly defined thus : "The objective of the Historical Statistics volumes is to provide a convenient reference source which has two functions—collection and referring. The collecting function consists of assembling, selecting, and arranging data from hundreds of sources and making them available in a single source. The referring function consists of text annotations to the data which act as a guide to sources of greater detail. The annotations also define terms used in the tables and include essential qualifying statements."

As a preliminary step it would be good if data on an all-India basis are published with exception in cases of statistics of ports, etc. The Statewise figures can be attempted at a later stage.

This series should be constructed for the geographical area covered by India as per today and should proceed backwards in time to the year in which collection of statistics was started in India. All changes introduced during these years, like separation of Burma, partition, re-organisation of States, addition of Goa, Pondicherry, etc.; introduction of new systems of coinage, weights and measures; changes in the base years of index numbers and changes in accounting years should be taken into consideration. For presenting the data the system followed by the Bureau of the Census, U.S.A. in its historical statistics may be used with modifications wherever necessary.

In the preparation of this volume, it would be necessary to take note of all publications and available material (published or unpublished) from research organisations, and private agencies and individual research workers. For this purpose it would be more useful, if an exhaustive bibliography of statistical material is prepared. In the preparation of this bibliography help and cooperation of all the major libraries in India

and abroad may be sought (This bibliography should be made up-to-date along with the Historical Statistics volume every ten years).

A committee should be formed in which universities, research institutions, government organisations, Reserve Bank of India, and private agencies which make use of statistics are represented, to discuss the series that are to be included and the sources that should be consulted in the preparation of the series.

One Government Department may not be in a position to provide all the personnel required. It is better if each of the series or a set of series is entrusted to an institution. Universities can get benefitted if students in the statistics departments are given a chance to work on these series on a part-time basis. This would give the DGS a reservoir of semi-trained hands when recruitment of new personnel is necessary. When a series is prepared it should be reviewed by an expert and revised on the basis of his comments.

The whole material should be published in a neat form, each table being provided with notes as to the sources of data made use of, sources where additional data can be obtained and adjustments made.

Statistics should, as far as possible, be on an annual basis. Demographic statistics may be treated as an exception. As far as possible, absolute figures should be given because they offer more flexibility to the user than derived series. "The Historical Statistics of the U.S." may be taken as a useful guideline.

Coming to the question of Surveys, it is possible that some research workers need survey data in greater detail than is available in published form. It would facilitate research if a "Data Bank" is established in the Mechanical Tabulation Section with the object of helping workers by making available a duplicate set of data cards regarding the survey. The electronic computers can reproduce cards in a short time and some nominal fee can be collected from the workers who need information.

A permanent survey division should be formed under the District Statistical Officer to conduct sample surveys for all governmental agencies. These units should be recruited from the regions in question to avoid difficulties in communication.



The District Statistical Officer should take periodic training in survey methods.

The various industrial enquiries conducted in the country should be integrated into a co-ordinated system with standard definitions and units of measurement.

It is possible that we are publishing far too many series which are not of much use. A thorough study should be made (by the committee constituted to suggest series to be included in the Historical Statistics) to see if some of them may be discontinued. The Annual Survey of Industries may be taken as an item for serious thinking in this regard.

Though annual data is very useful for many purposes, it is not, perhaps, necessary to conduct the census part of it every year. In the U.S.A., census of manufactures are taken once in 5 years, the data being supplemented by a sample survey of 20 per cent of the establishments in the intercensal years. In India, because the number of industrial units is small it may be easy at present to collect annual statistics of industries on a census basis. As we proceed with industrialisation this is going to cost much more.

The National Income Committee in its final Report observes (p. 126, para 3.17):

“While there should be no objection to sample enquiries filling gaps left by the annual census we would be opposed to any move that negatives the good beginning made by the DIS by initiating the annual census of manufacturing industries. We say this because instead of trying to make good its deficiencies in regional and subject coverage, there has been apparent, in recent years, a tendency to replace the census itself by means of a sample survey. If an annual census of manufacturing industries is not manageable, it should be made manageable by spreading it over a number of years. But it does not seem advisable to replace this systematic record by means of sample estimates. There are various ways by which the annual census may be distributed over a number of years. . . . There are more variations (to the technique of spreading) and the one which is most suitable to administration might be adopted. We feel, however, that the basis of this collection should be a systematic census and not a random sample survey.” (The Chairman reserved his opinion on this point.)

It should be understood that annual census are costly. Even if the country can afford there is a huge time-lag before results are published making them less useful. Added to the consideration of cost there is another point that is to be considered. Census estimates are better than sample estimates only when non-sampling errors are small (or sampling errors large). To assume that non-sampling errors are small in the Indian context, is perhaps being too optimistic. If the errors due to sampling are large a suitable method of sampling can always be made use of in selecting the sample, yielding better results. Simply because sampling errors are large in a particular survey we cannot underrate the importance of the developments made in sampling theory and practice. A better method of obtaining information would be to conduct complete census of all industrial establishments, without restrictions on power and the number of persons employed, once in 5 years and supplement the data by means of a suitable sample (say 10 or 20 per cent) in the intercensal years (with standard errors specified).

In these industrial surveys information on trade union membership, industrial disputes, and injuries from the establishments included in the survey may also be obtained so that those who want to study labour relations alongwith the other particulars collected under the surveys need not be discouraged because of lack of data (at present Labour Bureau gives the figures relating to these variables but the coverage is different from the Annual Survey of Industries).

### *Presentation of Information*

(1) Instead of presenting statistics for calendar year, financial year, crop year and academic year for different series, we can have a common year. The possibility of such a change should be explored at least in the presentation of data.

(2) Let each table be, as far as possible, on one page (let not the table be split in two, one on the left page and the other on the right, leading to non-alignment and confusion).

(3) If a uniform method of listing the tables and columns is adopted over the years it becomes easier for the user to refer to the necessary sections in each volume.

(4) For each item it would be better if figures for the

last 4 periods are also given.

(5) A little time spent on planning the publication would reduce a lot of wastage of paper. A larger part of the pages in most of the publications is covered by the column titles which are repeated in several pages.

There should be a research cell in the organisation responsible for publications, which provides notes on the data, how it can be used, the limitations of the data and to suggest new series to be entered as necessity arises.

### *Advantages of the Re-organisation*

Delay is reduced because of the use of high speed mechanical tabulators. The reduction in the number of publications leads to quick flow of information in published form.

Duplication of information does not arise because the whole work is done by one centralised agency. Repetition of series in several publications can be avoided by planning the publications carefully. Duplication of expenses on stationery and establishment is avoided because of reduced correspondence between primary agencies and responsible authority, and because of the reduction in publications.

The difficulty of non-placability is automatically eliminated when the system of publication is re-organised. If there is any doubt the user can get it clarified directly from the office of the DGS. Reliability is likely to increase because of the reduction in the errors of observation, reporting and compilation. This reduction is effected because of the transfer of trained men into the field, reduction in the number of despatches as a result of reduced number of agencies to deal with, leaving more time for actual observation, and the introduction of mechanical tabulation which reduces fatigue. There is an incentive to employees to work more efficiently because of the possibility of rising to higher positions caused by the broadening of the organisation.

Non-comparability between series does not arise because there is no duplication. In surveys, data would be more comparable because all surveys are co-ordinated by the Director of Surveys and data is collected by almost the same persons in each case. Co-ordination is, thus, easier. Periodic conferences at various levels would be useful in achieving this.

The users of Historical Statistics would find their work easier. The Data Bank would help the workers who use survey data.

### CONCLUSION

Reform invariably registers resistance from many quarters. This may be due to ignorance of the advantages of the reform, or due to vested interests. But when re-organisation leads to economy and efficiency it has to be gone through in spite of the resistance.

It is recognised that effectively functioning and properly integrated statistical services are essential to the development of accurate quantitative information in particular subject fields. Moreover, such services have become increasingly recognised as prerequisites to governmental planning and national development. When there is a plan of re-organisation it is better implemented before the situation becomes worse.

Added to these considerations, our developmental effort demands more effective use of scarce resources. This can be achieved only through a modified organisational scheme.

It should be kept in mind that the development of statistics is a continuous process. Periodic reviews of its progress provide summaries of achievement, pin-point any shortcomings, and indicate courses of action for future development.

Finally, agencies responsible for collection and dissemination of information should realise that there may be some workers who need data not available in published form. In case some one wants such data it should be made available to them (unless it is some secret information) without any hindrance.

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